

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

5 Applicant: Chia-Fu Chang
Filing Date: 06/25/2003 Art Unit: 2875
Serial No.: 10/604093 Docket No.: ELUP0003USA

Title: LED LIGHT SOURCE HAVING A HEAT SINK

10

To: Commissioner for Patents
P.O. BOX 1450
Alexandria, VA 22313-1450

OFFICIAL
RECEIVED
CENTRAL FAX CENTER
JUL 27 2004

15 Subject: Preliminary amendment for the above-identified
application.

Dear Sir:

20

INTRODUCTORY COMMENTS

Claim 1 of the application is amended to differentiate from
a prior art patent cited by the Taiwanese examiner. Claims
2, 5, 7, 8 are amended to fix grammatical errors. No new matter
25 is introduced by the amendment. Allowance of the amendment
is requested.

AMENDMENTS TO THE CLAIMS

1. (currently amended) A light emitting diode (LED) light source comprising:
5 a printed circuit board (PCB) having a plurality of holes;
a heat sink connected under the PCB for conducting heat;
a plurality of heat conductors protruding the heat sink
and formed on the heat sink corresponding to each hole
10 of the PCB for conducting heat, each heat conductor
having a basin on the topside; and
at least one LED chip attached to the basin of the heat conductor.
2. (currently amended) The light source of claim 1 further
15 ~~comprises~~ comprising a plurality of conductive metal wires
connected between an electrode of the LED chip and an
electrode of the PCB.
3. (original) The light source of claim 1 wherein the
20 material of the heat sink is aluminum.
4. (original) The light source of claim 3 wherein the
material of the heat conductor is aluminum formed from
the aluminum heat sink.
- 25 5. (currently amended) The light source of claim 1 further
~~comprises~~ comprising an adhesive for fixing the LED chip.
6. (original) The light source of claim 5 wherein the
30 adhesive is epoxy or silver epoxy.
7. (currently amended) The light source of claim 1 further

~~comprises~~comprising a housing for reflecting light and helping transmit heat.

8. (currently amended) The light source of claim 1 further
5 ~~comprises~~comprising a lens for focusing the light from the LED chip.